Testing and screening for HIV, hepatitis and TB among populations at risk

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Slide title

• Nothing to disclaim
Late HIV diagnosis remains a challenge with variation across transmission mode and age.

Percentage of people with HIV diagnosed late is higher among those infected heterosexually, particularly men, or through injecting drug use.

- Heterosexual contact (men): 62%
- Heterosexual contact (women): 54%
- Injecting drug use: 55%
- Sex between men: 39%

Percentage of people with HIV diagnosed late increases with age and is highest in people over age 50.

- Age 20-24: 32%
- Age 25-29: 41%
- Age 30-39: 51%
- Age 40-49: 61%
- Age 50+: 66%

Large testing and treatment gap persists in the East with variation across transmission mode and age.

- **Eastern Europe and central Asia**: 74% of people living with HIV have been diagnosed, 37% are on treatment, and 27% have viral suppression.
- **Western and central Europe**: 93% of people living with HIV have been diagnosed, 81% are on treatment, and 75% have viral suppression.

Regional essential targets by 2020 towards elimination of hepatitis

**2015 BASELINE**

- HBV - vaccination
- HBV - PMTCT*
- Blood safety
- Injection safety
- Harm reduction
- HBV - diagnosis
- HCV - diagnosis
- HBV - treatment**
- HCV - treatment

*Source: WHO Global Hepatitis Report, 2017

**Measuring the progress on vertical transmission prevention is limited by data on pregnant women screening coverage

** Measuring the progress on HBV treatment is now limited by the absence of data on the proportion of persons eligible

PMTCT = prevention of mother-to-child transmission

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*IN 50 PEOPLE 1 IN 50 PEOPLE* co-infection may occur

*Guidelines on Hepatitis B and C Testing* FEBRUARY 2017

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Measuring the progress on vertical transmission prevention is limited by data on pregnant women screening coverage. Measuring the progress on HBV treatment is now limited by the absence of data on the proportion of persons eligible. PMTCT – prevention of mother-to-child transmission.
HIV/Hepatitis C co-infection prevalence

82.4% co-infection in PWID

HIV co-infection continues to rise among TB patients in Europe

1 in 8

New TB patients notified in the WHO European Region in 2017 was HIV positive

Percent of HIV infection (est.) among new and relapse TB cases, WHO European Region, 2008-2017

- 2008: 3.7%
- 2009: 4.7%
- 2010: 6.1%
- 2011: 5.7%
- 2012: 6.4%
- 2013: 6.5%
- 2014: 7.7%
- 2015: 9.2%
- 2016: 11.5%
- 2017: 12.0%
Key populations, definition:

**Adults and adolescents (HIV, Viral Hep)**
1. Men who have sex with men
2. People in prisons and closed settings
3. People who inject drugs
4. Sex workers
5. Transgender populations

In the WHO European Region KP include: people living with HIV, people who inject drugs, men who have sex with men, transgender people, sex workers, prisoners and **migrants**. The sexual partners of people in these groups are also considered key populations.
Key populations – what we know

- Disproportionately affected by HIV & HCV
- Overlapping behaviours (e.g., MSM in prison who inject drugs)
- Increasingly difficult/hostile environment for key populations
  - Stigma and discrimination, including in the health sector
  - Punitive laws and hostile legal environment
  - Violence
- Poor access to HIV and other health services
- 'Ending AIDS epidemic' not possible without addressing needs of key populations

PLHIV are 16-27 times more likely to develop TB than persons without. TB most common presenting illness among PLHIV, including among those taking ART, it is the major cause of HIV-related deaths.
HIV treatment cascade for PLHIV who inject and do not inject drugs in Central Asia

Kazakhstan, Kyrgyzstan and Tajikistan

- Enrolled in HIV care out of those with confirmed HIV status
  - Non-PWID: 55%
  - PWID: 42%

- On ART out of those with confirmed HIV status
  - Non-PWID: 67%
  - PWID: 56%

- On ART for more than 12 months out of all on ART
  - Non-PWID: 63%
  - PWID: 64%

- With VL<1000 of those on ART for 12 months and more
  - Non-PWID: 64%
  - PWID: 59%

Slide courtesy of Wafaa El-Sadr: MOH data from the national EHCMS, 2017
Proportion of Persons who inject drugs (PWID) living with HIV who receive ART, by region

- South, east, and southeast Asia: <1%
- Western Europe, North America, and Australasia: 89%
- Eastern Europe and central Asia: <1%
- Sub-Saharan Africa: <1%

Impact of harm-reduction services

Both epidemic impact (HIV and HCV) and cost savings from increasing harm reduction coverage – study Belarus, Georgia, Kazakhstan, Moldova, and Tajikistan (2018)

Sources: Barska and Sazonov (2016) and Mabileau et al (2018)
Conducive environment for the transmission of HIV, HBV, HCV and TB among prisoners, prison staff and into the community.

In incarceration and post release opportunity to prevent and treat these diseases.

Interventions fallen short in high/low income settings.

Individual and structural barriers prevent effective measures.

Organisational level changes and health systems (justice and public health).
### Comprehensive package of services for key populations

<table>
<thead>
<tr>
<th>Health interventions</th>
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<tbody>
<tr>
<td>Condom programming</td>
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<td>Harm reduction interventions</td>
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<td>Behavioural interventions</td>
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<tr>
<td>HIV testing and counselling</td>
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<tr>
<td>HIV treatment and care + pre-exposure prophylaxis (PrEP)</td>
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<tr>
<td>Prevention and management of viral hepatitis, TB and mental health</td>
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<td>Sexual and reproductive health interventions</td>
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<td>Supportive legislation, policy and funding</td>
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## Target setting guide indicator framework

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<tr>
<th>Structural interventions</th>
<th>ENABLING ENVIRONMENT</th>
<th>• Identification of important structural factors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health interventions</td>
<td>AVAILABILITY</td>
<td>• Where, and to what extent, are these interventions available?</td>
</tr>
<tr>
<td></td>
<td>COVERAGE</td>
<td>• What is the <em>reach</em> of these interventions?</td>
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<td></td>
<td>QUALITY</td>
<td>• Do interventions meet defined quality standards?</td>
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<td></td>
<td>OUTCOME/ IMPACT</td>
<td>• Have risk behaviours or infection rates changed?</td>
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*World Health Organization*
Strategies to reach key populations

Acceptable, accessible and available

- Outreach
- Decentralisation of services
- Integrated services
- Differentiated service delivery
- Social network strategies; “Enhanced peer outreach”
- Confirm HIV test results in **14 days**
- Put on ART in **7 days**
Testing part of PrEP puzzle

• ‘with great power comes great responsibility’

• the saying applies for those committing PrEP regimen and getting regular HIV and STI tests
Newer HIV testing strategies: reaching the unreached

- Reduce time of diagnosis confirmation:
  - **Simplified testing strategies**
  - **Rapid diagnostic technologies**
- Tailor **testing strategies** to the context of the epidemic
- Trained **lay providers** can safely and effectively perform HIV testing services

- Since 2016, WHO recommends **self-testing** as an additional option to encourage HIV diagnosis
- Voluntary **assisted partner notification** as part of a comprehensive package of testing and care for PLHIV
HIV testing approaches in the WHO European Region 2016

Source: Global AIDS Reporting 2016

Note low reporting completeness in West (30%) and Centre (53%) compared with East (87%).
HIV testing approaches in the WHO European Region 2017

Source WHO/UNAIDS, Global AIDS Monitoring data 2017
**Non-EU/EEA countries implementing the regional Action plan on HIV - self-reporting 09/2017**

<table>
<thead>
<tr>
<th>Policy intervention from the Action plan on health sector response to HIV in the WHO European Region</th>
<th>% of EECA and non-EU/EEA countries aligning with the WHO policy</th>
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<tbody>
<tr>
<td>National HIV strategy defines an essential comprehensive package of HIV services is integrated into the national health benefits package</td>
<td>60%</td>
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<td>National strategy is aligned with national HIV testing and treatment protocols</td>
<td>67%</td>
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<td>National HIV strategy prioritizes community-based HIV service provision</td>
<td>60%</td>
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<tr>
<td>National strategy includes needle and syringe exchange programmes in prisons</td>
<td>27%</td>
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<tr>
<td>National strategy includes opioid substitution therapy programmes in prisons</td>
<td>60%</td>
</tr>
<tr>
<td>National strategy includes pre-exposure prophylaxis (PrEP) for populations at substantial risk of HIV</td>
<td>33%</td>
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<tr>
<td>National strategy promotes early congenital syphilis diagnosis of infants and immediate treatment for all infants diagnosed with congenital syphilis</td>
<td>53%</td>
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<tr>
<td>National strategy promotes HIV testing conducted by trained lay service providers</td>
<td>33%</td>
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<tr>
<td>National strategy promotes HIV self-testing</td>
<td>20%</td>
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<tr>
<td>National strategy encourages innovative financing in the HIV response</td>
<td>67%</td>
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</table>
What is feasible?

• Decentralize services? In the East only?
  – For HIV and hepatitis testing?

• Bringing services closer to where the need is?
  – Tailored interventions - key populations!
  – (EECA known for good PMTCT, but no need to test 3 times in pregnant women)

• What are the implications? Are the systems in countries ready?

• Optimal approach?
Non EU/EEA countries spoke about decentralizing testing services…. But not fully ready to uptake RDTs… how can decentralization work?
Testing strategies

Low prevalence (<5%)

High prevalence (>5%)
Test for triage

• Most useful for
  – HIV self-testing
  – Community-based testing
  – Settings where all three assays can not be conducted reliably

Not useful for

• Same-day diagnosis
Diagnosis of chronic HCV infection

**SEROLOGICAL TESTING**

1. **ANTI-HCV ANTIBODY**
   - Single RDT or laboratory-based immunoassay
     - Anti-HCV (+, reactive)
       - Report positive
       - Compatible with current or past HCV infection
     - Anti-HCV (−, non-reactive)
       - Report negative
       - No serological evidence of HCV infection

2. **HCV RNA NUCLEIC ACID TEST (NAT)** (qualitative or quantitative) or HCV core antigen (cAg)
   - HCV RNA test or cAg +
     - Report detected (with viral load if available)
     - Compatible with acute HCV infection
   - HCV RNA test or cAg −
     - Report not detected
     - No current viremic HCV

**ASSESSMENT OF STAGE OF LIVER DISEASE** (using clinical criteria and non-invasive tests (NITs), i.e., APRI score >2 or based on TE)

**OTHER CONSIDERATIONS FOR TREATMENT** (e.g., comorbidities, HCV genotyping, pregnancy and potential drug-drug interactions)

**FACTORS TO BE CONSIDERED IN PRIORITIZING TREATMENT**
1. Increased risk of death (e.g., advanced fibrosis and cirrhosis, post-liver transplantation)
2. Risk of accelerated fibrosis (e.g., HIV or HBV coinfection, metabolic syndrome, high level of alcohol use)
3. Extratherapeutic manifestations and evidence of end-organ damage (e.g., decompensating failure, vasculitic and lymphoproliferative disorders)
4. Significant psychosocial morbidity (e.g., due to stigma, discrimination, fear of transmission to others)
5. Maximizing reduction in incidence (e.g., in PWID, MSM, prisoners, sex workers, women of childbearing age, health-care workers)

Diagnosis of chronic HBV infection

**SEROLOGICAL TESTING**

1. **HEPATITIS B SURFACE ANTIGEN (HBsAg)**
   - Single RDT or laboratory-based immunoassay
     - HBsAg (+, reactive)
       - Report positive
       - Compatible with HBV infection
     - HBsAg (−, non-reactive)
       - Report negative
       - No serological evidence of HBV infection

2. **ASSESSMENT OF STAGE OF LIVER DISEASE** (using clinical criteria and/or non-invasive tests for presence of cirrhosis, i.e., APRI score >2 or based on TE)

   **HBV DNA NUCLEIC ACID TEST (NAT) (quantitative)**
   - To further guide who to treat and not treat, if no evidence of cirrhosis
   - Yes
     - PRESENCE OF CIRRHOSIS
   - No

**TREATMENT FOR TREATMENT**

**ALL AGES**
- >30 years (in particular)
### WHO-recommended collaborative TB/HIV activities

A. Establish and strengthen the mechanisms for delivering integrated TB and HIV services
   - A.1. Set up and strengthen a coordinating body for collaborative TB/HIV activities functional at all levels
   - A.2. Determine HIV prevalence among TB patients and TB prevalence among people living with HIV
   - A.3. Carry out joint TB/HIV planning to integrate the delivery of TB and HIV services
   - A.4. Monitor and evaluate collaborative TB/HIV activities

B. Reduce the burden of TB in people living with HIV and initiate early antiretroviral therapy (the Three I's for HIV/TB)
   - B.1. Intensify TB case-finding and ensure high quality antituberculosis treatment
   - B.2. Initiate TB prevention with Isoniazid preventive therapy and early antiretroviral therapy
   - B.3. Ensure control of TB Infection in health-care facilities and congregate settings

C. Reduce the burden of HIV in patients with presumptive and diagnosed TB
   - C.1. Provide HIV testing and counselling to patients with presumptive and diagnosed TB
   - C.2. Provide HIV prevention interventions for patients with presumptive and diagnosed TB
   - C.3. Provide co-trimoxazole preventive therapy for TB patients living with HIV
   - C.4. Ensure HIV prevention interventions, treatment and care for TB patients living with HIV
   - C.5. Provide antiretroviral therapy for TB patients living with HIV
Impact of combination interventions on HIV infection in PWID: Modelling example

*Strathdee et al HIV and risk environment for injecting drug users: past, present, and future *Lancet* 2010; 376: 268-84
SIMPLE, AFFORDABLE AND EFFECTIVE HIV/TB PROGRAMMES

All people living with HIV should have access to:
- Antiretroviral Therapy
- TB diagnostics and treatment
- Regular TB screening
- TB preventive therapy (if no TB symptoms)

All people living with TB should have access to:
- HIV testing and antiretroviral therapy
- HIV prevention options
- TB treatment
WHO HTS Info: new app